

CLAIMS

What is claimed is:

1. A connector for connecting a hose to a wall structure having a bore extending therethrough, the connector defining a flow path between the hose and a chamber defined by the wall structure, the connector comprising:

a housing having a first end, said housing adapted to be mounted in the bore formed through the wall structure such that said first end extends into the chamber;

a spring clip coupled to said first end of said housing, said spring clip adapted to prevent removal of said housing from the bore;

a retainer secured to a second end of said housing and defining a female receptacle in communication with the chamber; and

a male connector having a first end secured to the hose and a second end adapted for retention in said female receptacle of said retainer.

2. The connector of claim 1 wherein said spring clip includes a radially extending segment adapted to engage the wall structure.

3. The connector of claim 2 wherein said housing includes an aperture, said segment being at least partially positioned within said aperture.

4. The connector of Claim 1, wherein said spring clip further includes segments and at least one leaf spring interconnecting said segments so as to permit

resilient movement of said segments between a retracted position and an expanded position.

5. The connector of Claim 4, wherein said segments are resiliently deflected from their expanded position to their retracted position in response to installation of said first end of said housing into the bore, and wherein said segments of said spring clip are permitted to return to their expanded position once said segments are located in the chamber.

6. The connector of Claim 3, wherein said spring clip further includes a retention lug engaging an edge surface of said aperture for preventing dislodgement of said spring clip from said housing.

7. The connector of Claim 1, wherein said retainer includes a projection that is adapted to be retained in an aperture formed in said housing to secure said retainer to said housing.

8. The connector of Claim 7, wherein said retainer includes a cylindrical retainer body segment adapted for retention in said aperture formed in said housing, said retainer further including a wall segment extending from said retainer body segment, and an arcuate spring arm extending from said wall segment.

9. The connector of Claim 8, wherein a retention rim formed on said second end of said male connector is adapted to cause said spring arm to deflect radially outwardly upon insertion into said female receptacle until said retention rim is located in an annular space defined between said spring arm and said retainer body segment, and wherein once said retention rim is located in said annular space, said spring arm returns to its non-deflected position for retaining said rim in said annular space, thereby snap-locking said male connector to said retainer.

10. A method for mounting a connector having a housing, a retainer and a spring clip to a wall structure with a mounting bore extending therethrough to define a flow path between a hose and an internal chamber defined by the wall structure, the method comprising the steps of:

inserting the connector into the mounting bore such that a first end of the housing is located within the internal chamber;

biasedly engaging the spring clip with the mounting bore;

coupling a first end of a male connector to the hose;

inserting a second end of said male connector into a female receptacle of said retainer; and

removably securing said male connector in said female receptacle.

11. The method of claim 10 further including positioning segments of the spring clip within apertures formed in said first end of said housing.

12. The method of claim 11 further including deflecting said segments from a normally expanded position to a retracted position when positioned within the mounting bore.

13. The method of claim 12 expanding said segments of said spring clip from said retracted position to said expanded position when said first end of said housing is located with the internal chamber.

14. The method of claim 13 further including positioning a first cylindrical body segment of the housing within a smaller bore segment of the mounting bore and further positioning a second cylindrical body segment of the housing within a larger bore segment of the mounting bore, wherein said first body segment is smaller than said second body segment.

15. The method of claim 14 further including engaging a radially extending portion of said second body segment with a shoulder of the mounting bore located at the intersection of said smaller and larger bore segments.

16. The method of claim 15 further including mounting the retainer within a cavity formed in said second body segment of the housing to define said female receptacle.

17. The method of Claim 13 wherein said spring clip includes a leaf spring interconnecting said segments and which permits movement thereof between said expanded and retracted positions.

18. The method of claim 10 including coupling the retainer to the housing in a snap-fit connection.

19. A connector for connecting a hose to a wall structure to define a flow path between the hose and an interior chamber defined by the wall structure, comprising:

a housing having a central flow passage and first and second ends, said housing is adapted to be mounted in a bore formed through the wall structure such that its first end extends into the interior chamber;

a spring clip coupled to said housing, said spring clip having segments adapted to engage the bore to prevent removal of said housing from the bore; and

a male connector having a first end secured to the hose and a second end adapted for retention in a female receptacle associated with said second end of said housing.

20. The connector of claim 19 wherein said segments of said spring clip are positioned within apertures formed in said first end of said housing.

21. The connector of Claim 20, wherein said spring clip further includes a pair of leaf springs interconnecting said segments so as to permit resilient movement of said segments between a retracted position and an expanded position.

22. The connector of Claim 21, wherein said segments are resiliently deflected from their expanded position to their retracted position in response to installation of said first end of said housing into the bore, and wherein said segments

of said spring clip are permitted to return to their expanded position once said segments are located within the interior chamber.

23. The connector of Claim 21, wherein said spring clip further includes retention lugs for engaging edge surfaces of said apertures for preventing dislodgement of said spring clip from said housing.

24. The connector of Claim 19, wherein the bore is formed in the wall structure between an exterior surface and an interior surface which communicates with the interior chamber, wherein the bore is stepped to define a larger section in communication with the exterior surface and a smaller section in communication with the interior surface, and wherein said first end of said housing includes a first body segment adapted for retention in the smaller section of the stepped bore and said second end of said housing includes a second body segment adapted for retention in the larger section of the stepped bore.

25. The connector of Claim 24, wherein said second body segment of said housing defines a cavity within which a retainer is secured, said retainer defining said female receptacle.

26. The connector of Claim 25, wherein said retainer includes a projection that is adapted to be retained in an aperture formed in said second body segment of said housing to secure said retainer to said housing.

27. The connector of Claim 25, wherein said retainer includes a cylindrical retainer body segment adapted for retention in said cavity formed in said second body segment of said housing, a wall segment extending from said retainer body segment, and an arcuate spring arm extending from said wall segment.

28. The connector of Claim 27, wherein a rim formed in said second end of said male connector is adapted to cause said spring arm to radially outwardly deflect upon insertion into said female receptacle until said rim is located in an annular space between said spring arm and said retainer body segment, and wherein said spring arm is thereafter released and returns to its non-deflected position for retaining said rim in said annular space, thereby snap-locking said male connector to said retainer.